a) Remarks/Arguments:

In response to complaint 3) Claim Rejections- 35 USC § 101, deleting the method steps attributed to access tokens in claim 8.

a) Claim 8 was changed and added the language of statutory subject matter by adding a functional program, computer readable medium, producing a useful, concrete and tangible result when used in computer system. This computer- readable medium defines structural and functional relationship between the data structure and hardware/software components.

b) this claim, and the subsequent ones 9-16, do not correspond to Biffar, (Please see below, in discussion of rejection 7, the distinction to Biffar.)

Claim 9 a) was drafted as an independent claim, also claim 9's functional relationship to other claims, while standing independent, was shown. Also

Claim 10 a) was edited to become an independent claim that is not parallel or limited to claims 8-9, and

Claims 11-13. Edited to become independent claims not parallel or limited to claims 8-9.

Claim 14 has been redrafted.

Claim 15 has been redrafted to become independent, and to conform to previous claims.

Claim 16 has been redrafted to become an independent claim not parallel or limited to claims 8-9.

Claim 17 was redrafted.

In response to complaint 4, claim rejections 35 USC §112, Claim 15 was
redrafted to comply with the enablement requirements of the statute.

In response to complaint 5(1), claim rejections 35 USC §112, Claim 15 was
redrafted to particularly point out and distinctly claim the invention.
Also the reference to packet controller and packet wallet are not used
in conjunction with each other.

In response to complaint 5(2), claim rejections 35 USC §112, Claim 15 was
redrafted as an independent claim, and therefore the dependency claim
is moot as to claims 8,10, and 12.

In response to complaint 6, claim rejections 35 USC §112, all the suggested
references by the examiner have been addressed respectively.

In response to Point 6 of Advisory;

Applicant is attempting to comply with the examiner in addressing the

teaching of the two patents he listed in the advisory.

In response to Claim Rejection 7, of 35 USC §102

This rejection was based on Biffar (US Patent 6,047,289), which also affects

claims 8-14 and 16-17. Because the issues are similar or identical for each of

these claims, I will address them mostly together.

It is respectfully submitted that Biffar's innovation is entirely different in scope, approach, technology, and operations. In consequence, there are no similarities or anticipation of the Biffar patent and the submitted patent application. Biffar is an electronic fund transfer system; the submitted patent application not merely a method of electronic payment such as patent 6,047,269 to Biffar. Its innovation is to take the entire system of packetized communications a step further. Arguably, the major contribution of traditional packetized data communications, going back to the 1960s, had been to integrate, in the same packet of bits, content information with information about recipient and destination address, thereby enabling the content to be routed without further instructions from the sender or from a central controller.

The key aspect of the claimed invention is to add to the packet content and address, also (a) a means of payment, and (b) transaction intelligence (a packet controller), *all in the same packet (or associated group of packets, termed a packet convoy.)* In that fashion, the content information becomes capable of transacting as an *independent agent* controlled by its own packet controller and not just following instructions of a central system or of hardware devices. It also becomes capable of paying for services renedered to it, such as network transmission, and also capable of collecting payments

and returning it back home. The packet also becomes capable for buying a service, or selling the information, based on changing prices, and to engage in such transactions based on its own decision calculus. The interaction of these numerous independent agents with the facilities from which they buy and sell creates a real-time market mechanism, not just a method to pay for transactions.

Patent 6,047,269 claims a method different in at least the following ways: 1. Its "digital vouchers" – the key component-- are separate from the information content and the underlying transaction itself. In contrast, in this patent application, the means of payment, the transaction mechanism, and the content, are integrated and travel together. The information travels with its own money and control mechanism, enabling it to act as an independent agent. Biffar's vouchers, in contrast, are merely envelopes for cash, with a record for the transactions, the ability to keep some money after payment of a lesser amount, based on a processor *outside of the voucher*, and without the independence of the transaction agent. The distinction of Biffar's payments voucher and our transactional data packets can be seen by comparing Biffar's *Figure 1A* with our *Figure 1*. Biffar's voucher merely represents *one* of the component items of the transactional data packet, specifically

item 20, (of 14 different component items). Conversely, we do not include elements corresponding to Biffar's dynamic log 20000 (21000-26000) and to major parts of the identifying element 10000, such as the serial number, account number, and other data. In sum, Biffar's voucher and our packet overlap in only one item out of 14 of our system, and one out of 7 items of his system. That item is the concept of the access token. And it is not our claim to have invented that concept, which is basically a variant of an electronic coin, and of which there are several patented approaches.

2. In Biffar's Patent 6,047,269, the vouchers are being identified, and each transaction is being logged on the voucher, and can be checked up and re-traced. In contrast, in the invention claimed here, data packets proceed without such identification and monitoring, as in the case of cash transactions, vs. checking and credit card-style transactions. This enables liquidity and a move of the payment tokens, as in the case of cash, and in contrast to the limited liquidity of credit card vouchers. This enables market transactions.

3. The Biffar system is tightly controlled and "self-contained"; its participant devices must be "initialized" with an "identification number", there is a "central system" in control, it requires "attached logs" of

16

transactions, establishes "digital signatures", "receipts", and enables a "recreation of the movement of a voucher", by "authorized persons", with transactions that might have a centrally-set "limit" that "forces" vouchers back into the "central system." None of this is needed in the proposed invention, though it can be provided. We establish a system that operates without such central controls, which is not part of a self-contained system, but which is based on the decentralized transactions of packets managed by their own packet controllers. Nor, I seems, is Biffar a real-time system. To analogize, Biffar's fund transfer system resembles more a paper trail of a credit card payment system; whereas the system of our application resembles more a person, possessing content information plus intelligence, and carrying cash, and engaged in transactions. Biffar's vouchers do not posses independent transactional capability beyond payment, nor do they contain content information such as media-type information, which would be a major potential application for our innovation.

4. Biffar's "Central System" (basically a bank) is not comparable to our "Issuer of Tokens" (Figure 2, item 50). Both issue tokens, but our system does not exercise control as in Biffar, it is merely one of multiple issuers and redeemers of access tokens, in the same way that there are multiple issuers

17

of Green Stamps, and they can be recognized by all redeemers at face value or at an exchange rate.

5. Similarly, in the applied-for system, the devices utilized such as transmission networks or facility wallets do not receive instructions, in contrast to Biffar's system which has remote devices instructed by the central system. In our applied-for system, the transactions are between the transaction token controllers and the facilities' wallet controllers; there need be no direct control of these transactions by the central system, within broad parameters of task definition.

6. In Biffar's system, log digits pertaining to the history of transactions record these transactions. (*Figure 1A*, History Part n etc, 21000-214000). In contrast, the convoy information field (Noam application *Figure 1*, item 14) is merely a listing of the associated packet group in a longer transaction, specifically a listing of a string of payload data in follower packets. There is no similarity to the two concepts.

7. Biffar's log, as aforementioned, records the transaction history to enable its recreation for security purposes. This is different from our facility access controller (Figure 2, item 64) that establishes access conditions for follower packets, subsequent to the establishment of a transaction through the transaction packets. There are no such transactions in Biffar's scheme that

unlock access to follower packets, and indeed there are no follower packets, and not even definable packets at all.

Thus, Biffar's Patent 6,047,295 creates a very different system. It creates a kind of "electronic Brink's truck" as a fund transfer mechanism to pay for transactions entered separately, to record these transactions, all within a tightly controlled and self-contained system whose purpose is to maintain security. In contrast, the applied-for invention creates openness, through autonomous agents and their transactions, which enable self-organizing markets. The agents are based on the integration of content information, means of payment, and transaction control. The system is not concerned with recording, authorization, recreation, or identification. Its major application might be a rapid, real-time micro transactions involving media use by consumers. Whatever similarity might exist is solely that both methods move payments electronically. But other electronic methods of payments exist in a variety of ways, all expressing money through electronic strings. That concept is not the claim of this application. Nor is it the claim of this application that payment transactions can be made over the Internet and other electronic networks; such use for any electronic network also already exist. Nor is there a claim for the concept of a remotely located

facility gateway per se. Such potential remoteness is an inherent part of electronic communications and transactions.

In conclusion, Biffar's system is entirely different in concept. Biffar's is basically a payment method. Ours is basically a transaction system. The two may seem similar, as both create payment mechanisms, but they are very different in approach. Biffar aims to create a secure and controllable payment mechanism within a self-contained system. We aim at something different, to create a mechanism for market transactions by autonomously acting blocks of information that incorporate information content as well as payment means and an internal control mechanism. We do not mention the term "security"; Biffar, as far as we could observe, does not mention the term "markets". Our aims are entirely different, as are our proposed systems in technological terms.

Point 8 of rejection. This point refers to prior art not relied upon, in an application by Uzo, US 2003/00611 A1.

    a) Even if Uzo were directly on point -- which it is not, as will be discussed below -- it cannot be considered to have priority. First, the application's date is Oct 15, 2002, over two years *after* my filing,

which is September 5, 2000. Second, the publication date of the application was March 27, 2003, more than two months *after* the filing of my amendments, which is January 2003. Third, the Uzo application makes reference to be a continuation-in- part of application 09/650,293; but since that application has apparently not been granted yet, I have no way to respond to it, or to evaluate how much of the more recent published application is new and how much had been originally filed.

b) Substantively, Uzo is a very different system and hence not prior art. Like Biffar's patent, it is a funds transfer system, similar to those accompanying a credit card transaction. There are direct and identifiable transactions among merchants, consumer, a financial institution, and possibly a validator. Merchants cannot create tokens. In Uzo's system is one of "single-use" of tokens.(para 22, p. 2). In contrast, our proposed system is one of continuously circulating electronic tokens, circulating among numerous parties who need not have prior established commercial relations with each other. Uzo's system, as Biffar's, also entirely divorces payment from the content information on a packet, or from control intelligence. Indeed, those two elements are not part of his system.

Uzo's summary of the background for the invention and past patents (par 5-22, pp. 1-2) strengthens the argument of our present application that it is a new invention. His discussion of the three real-time token system (para 19-21) does not identify an in-packet, autonomous, self-controlling, transacting payment system of the kind applied for here.

Both Biffar's and Uzo's focus is on securing electronic transactions. The transactions they envision are probably of a size similar to a debit card purchase. And although the magnitude of payment may vary, the concern is to assure merchants of the validity of the transaction. In contrast, it might be best to visualize our application as aiming to create an automatized micro-payment system for consumers to download music, articles, online information, and video, from a large number of sources, in a hugely rapid pace of hundreds of such transactions per hour for a user engaged in media consumption, with many partners to such transactions with whom they have not established commercial ties. A visit to some web pages could thus be charged for, the viewing of a new music video be charged for, the viewing of an advertising banner be rewarded, or a temporary storage of excess email be paid for. The system creates tiny coins that can circulate from transaction to transaction: nano-money, for nano-transactions, creating autonomous electronic-based markets. And to the extent that markets may lead to

efficient resource allocations, such self-organizing transaction markets might have significant long-term economic implications far beyond mere convenience. We believe that the applied-for integration of information, money, and, control intelligence will have significant applications and impacts.

Thus, the prior art does not teach each and every element and limitation of the invention. Although there is similarity between the patents in that they all deal with e-payment schemes to transfer and store money electronically, and to pay electronically for transactions, the prior art is not anticipatory. The prior art schemes do not operate on the packet level, and do not assign information packets with the means and the ability to transact directly. The key aspects of the claimed innovation are not primarily an innovation of electronic payment tokens or of electronic wallets, but an innovation of creating data packets that can engage in exchange transactions. This includes, first, the inclusion of the payment means (the access tokens) inside the same packet as the information "payload" itself, and, second, the inclusion of control capability in that information packet. Thus, the data packet would come with resources (be "rich") and control (be "smart"). With these elements, the data packet could engage in transactions without centralized or even peripheral control. (Claims 8 and 9). The subsequent claims are variations. Claims 10 and 11 embed the money not in the information data packet itself but in a larger program, that of an intelligent agent, enabling that intelligent agent to transact independently. Claims 12 and 13 place the electronic money in the packet without the control

23

capability, leaving transactions to pre-programmed transactions at the various facilities. Claim 14 permits a transaction data packet to transact in behalf of several "follower packets", still maintaining control by the "smart" and rich" packet. Claim 15 permits the division of the controller functions and wallet functions to be spread over several transaction data packets. This is useful if these programs are lengthy, and still maintains "smart" and "rich" packets. Claim 16 permits the transaction data packet to include also other software programs beyond the packet controller and the access tokens, thus expanding the capability of the transaction data packets to engage in additional types of performance. Finally, Claim 17 creates facility gateways that are remote from their actual facilities, thus enabling transactions at a distance from the facilities. This permits the emergence of markets. For example, there could be automatized markets for transmission capacity, in which network facilities' gateways offer services at some common nodes, and transactions packets bid for these services through their packet controller, pay for them through access tokens, and get routed to whatever network they entered into a transaction with.

US 6,047,269 to Biffar (2000) *Self-Contained Payment System with Circulating Digital Vouchers*

US 2003/0061170 A1 Patent Application Publication, Uzo (March 27, 2003)

I have earnestly tried to find an overlap in other patents and articles. But the additional patents and articles provided to me actually strengthen my confidence in the novelty of my application. Just as the concept of data packets and of packet switching, novel in the 1960s, revolutionized data

communications and enabled the Internet, so does my expansion of this concept to incorporate means of payment and of control enable decentralized electronic transactions, and can be the basis for an entirely new level of network development and electronic transactions.

I will be happy to clarify this further with you in any means you wish.

Sincerely yours,

Eli Noam

Professor, Columbia University
(not submitted for university)
but privately